DEPARTMENT of ENVIRONMENTAL SERVICES Water Supply & Pollution Control Division - Biology Bureau

LAKE TROPHIC DATA

MORPHOMETRIC:

Lake: BLACK POND	Lake Area (ha):	2.43
Town: LINCOLN	Maximum depth (m):	13.5
County: Grafton	Mean depth (m):	5.1
River Basin: Merrimack	Volume (m³):	123000
Latitude: 44°06'27" N	Relative depth:	7.6
Longitude: 71°35'00" W	Shore configuration:	1.23
Elevation (ft): 1650	Areal water load (m/yr)	: 8.35
Shore length (m): 680	Flushing rate (yr^{-1}) :	1.60
Watershed area (ha): 26.7	P retention coeff.:	0.57
<pre>% watershed ponded: 0.0</pre>	Lake type:	natural

BIOLOGICAL:		17 January 1996	23 August 1995
DOM. PHYTOPLANKTON (% TOTAL)	#1	ASTERIONELLA 65%	MALLOMONAS 95%
	#2		
	#3	(ALL ALGAE SPARSE)	
PHYTOPLANKTON ABUNDANCE (units/m	L)		
CHLOROPHYLL-A (µg/L)			3.65
DOM. ZOOPLANKTON (% TOTAL)	#1	KERATELLA 41%	KERATELLA 80%
	#2	DAPHNIA 23%	DAPHNIA 7%
	#3	CALANOID COPEPOD 23%	
ROTIFERS/LITER		9	541
MICROCRUSTACEA/LITER		11	88
ZOOPLANKTON ABUNDANCE (#/L)		22	656
VASCULAR PLANT ABUNDANCE			Scattered
SECCHI DISK TRANSPARENCY (m)			3.5
BOTTOM DISSOLVED OXYGEN (mg/L)		2.5	0.8
BACTERIA (E. coli, #/100 ml)	#1		< 1
	#2		< 1
	#3		

SUMMER THERMAL STRATIFICATION:

stratified

Depth of thermocline (m): 4.0 Hypolimnion volume (m^3) : 31000 Anoxic volume (m^3) : 36000

CHEMICAL:	,		BLACK PON	ND	
	17 Janua	ary 1996	23 1	August 199	95
DEPTH (m)	2.5	7.5	1.0	4.5	9.5
pH (units)	6.1	6.1	6.7	6.3	6.5
A.N.C. (Alkalinity)	4.8	6.3	5.7	8.8	19.7
NITRATE NITROGEN	0.06	0.08	< 0.10		< 0.10
TOTAL KJELDAHL NITROGEN	0.30	0.34	0.35	0.32	1.04
TOTAL PHOSPHORUS	0.006	0.006	0.009	0.009	0.029
CONDUCTIVITY (µmhos/cm)	28.1	29.3	24.9	32.0	52.4
APPARENT COLOR (cpu)	49	49	47	46	135
MAGNESIUM			0.46		
CALCIUM			5.1		
SODIUM			1.7		
POTASSIUM			0.56		
CHLORIDE	< 2	< 2	< 2		< 2
SULFATE	3	3	3		2
TN : TP	. 60	70	39		36
CALCITE SATURATION INDEX			3.1	Latte	

All results in mg/L unless indicated otherwise

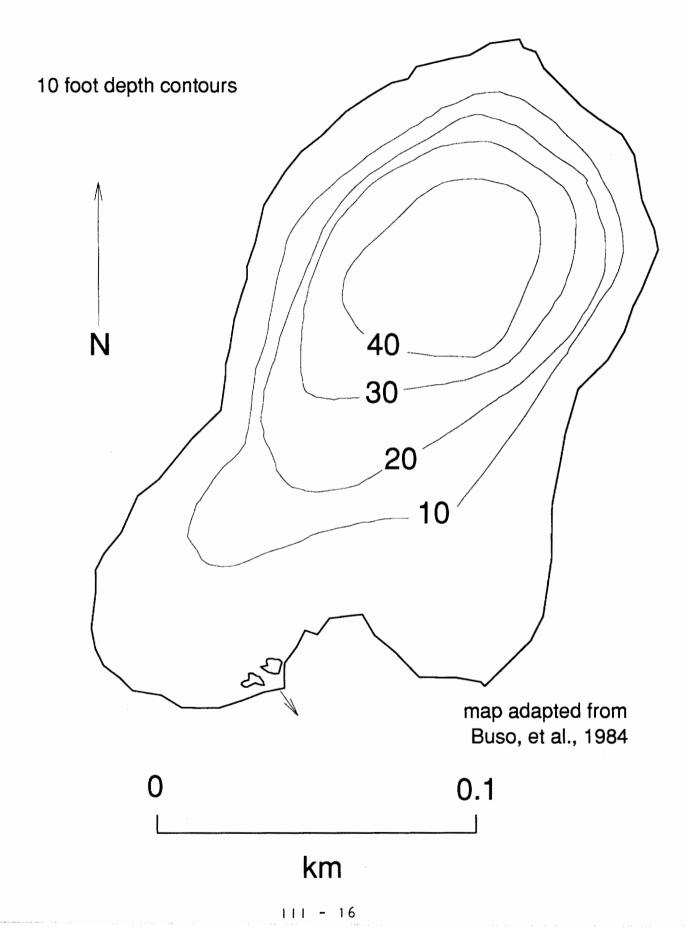
TROPHIC CLASSIFICATION: 1995

D.O.	S.D.	PLANT	CHL	TOTAL	CLASS
6	2	1	0	9	Meso.

COMMENTS:

- 1. This is a small but relatively deep remote, high elevation trout pond located in the White Mountain National Forest. It was surveyed cooperatively with the Fish and Game Department.
- 2. The pond has been sampled annually in the spring since 1982 as part of F&G's helicopter stocking program. The pH and ANC have shown a stable trend during this time.
- 3. The anoxic bottom waters resulted in the release of nutrients, color and ANC from the deep sediments.

Black Pond Lincoln



FIELD DATA SHEET

LAKE: BLACK POND

DATE: 08/23/95

TOWN: LINCOLN

WEATHER: CLOUDY, BREEZY & WARM

DEPTH (M) (°C) *DISSOL OXYGE 0.1 22.0 8.1 1.0 21.5 7.9	EN SATURA L 92	TION
		8
1.0 21.5 7.9	87	. •
		8
2.0 21.0 7.8	86	8
3.0 19.0 8.2	2 88	8
4.0 14.2 6.1	L 59	8
5.0 10.0 2.5	5 22	8
6.0 7.2 0.4	3	8
7.0 5.9 0.4	3	8
8.0 5.0 0.4	2	8
9.0 5.0 0.5	5 4	8
10.0 5.0 0.5	5 4	8
11.0 5.0 0.6	5 5	8
12.0 5.0 0.8	3 6	8

SECCHI DISK (m): 3.5 **COMMENTS:**

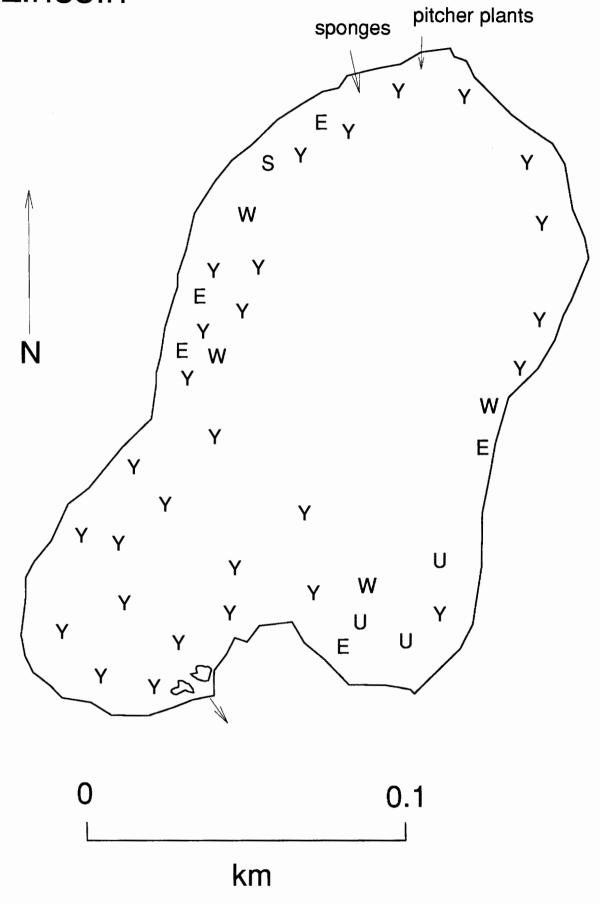
BOTTOM DEPTH (m): 12.5

The entire hypolimnion was anoxic.

TIME: 1145

*Dissolved oxygen values are in mg/L

Black Pond Lincoln



AQUATIC PLANT SURVEY

LAK	E: BLACK POND	TOWN: LINCOLN	DATE: 08/23/95	
Key	PLANT	NAME	ABUNDANCE	
кеу	GENERIC	COMMON		
Y	Nuphar	Yellow water lily	Scattered	
บ	Utricularia	Bladderwort	Sparse	
E	Eriocaulon septangulare	Pipewort	Sparse	
W	Potamogeton	Pondweed	Sparse	
S	Sparganium	Bur reed	Sparse	
	A. A			
		44		
		OVERALL ARINDANCE		

OVERALL ABUNDANCE: Scattered

GENERAL OBSERVATIONS:

- Sponges and pitcher plants were observed along the northern shoreline. An old beaver lodge and sunken logs were also present.
- The rotifer Keratella was very abundant; the copepods were orange from their fat globules (abundant food supply).